



# Hand Safety Week – Preventing RSI's

**Richmond Refinery Safety Topic of the Day  
Wednesday**

**9/23/09**

***Attention: Please turn on speakers for audio  
attachment on the last slide!***



# The size of the problem

Hand injuries are the single largest category of injuries at Chevron

## **Why?**

- Hand RSIs averaged 8% of all hand recordable injuries in the last 5 years.

# What is a Repetitive Stress Injury?

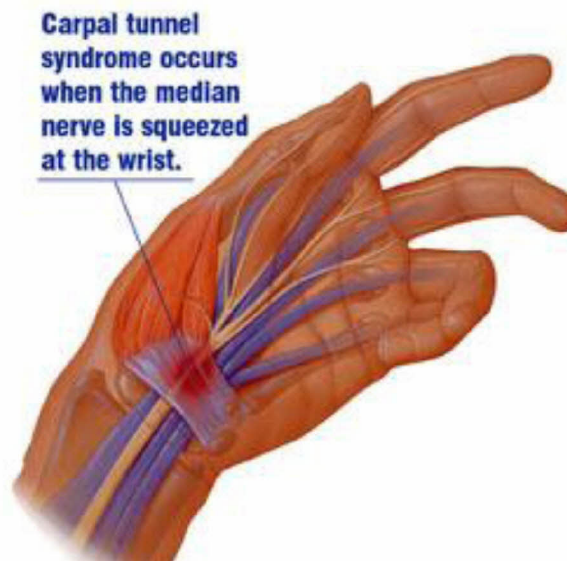
Repetitive stress injuries (RSI) are a group of conditions generally caused by placing too much stress on a joint. Most repetitive stress injuries are associated with repetitive motions at the computer or overuse injuries in sports.

An RSI occurs when stress is placed on a joint, pulling on the tendons and muscles around the joint. When the stress occurs repeatedly, the body does not have time to recover and becomes irritated. The body reacts to the irritation by increasing the amount of fluid in that area to reduce the stress placed on the tendon or muscle.

**RSI's are also called Cumulative Trauma Disorders.**

## Examples of RSI's

- Back Strains/ Sprains
- Carpal Tunnel Syndrome
- Cubital Tunnel Syndrome
- Tendinitis
- Shoulder Strains



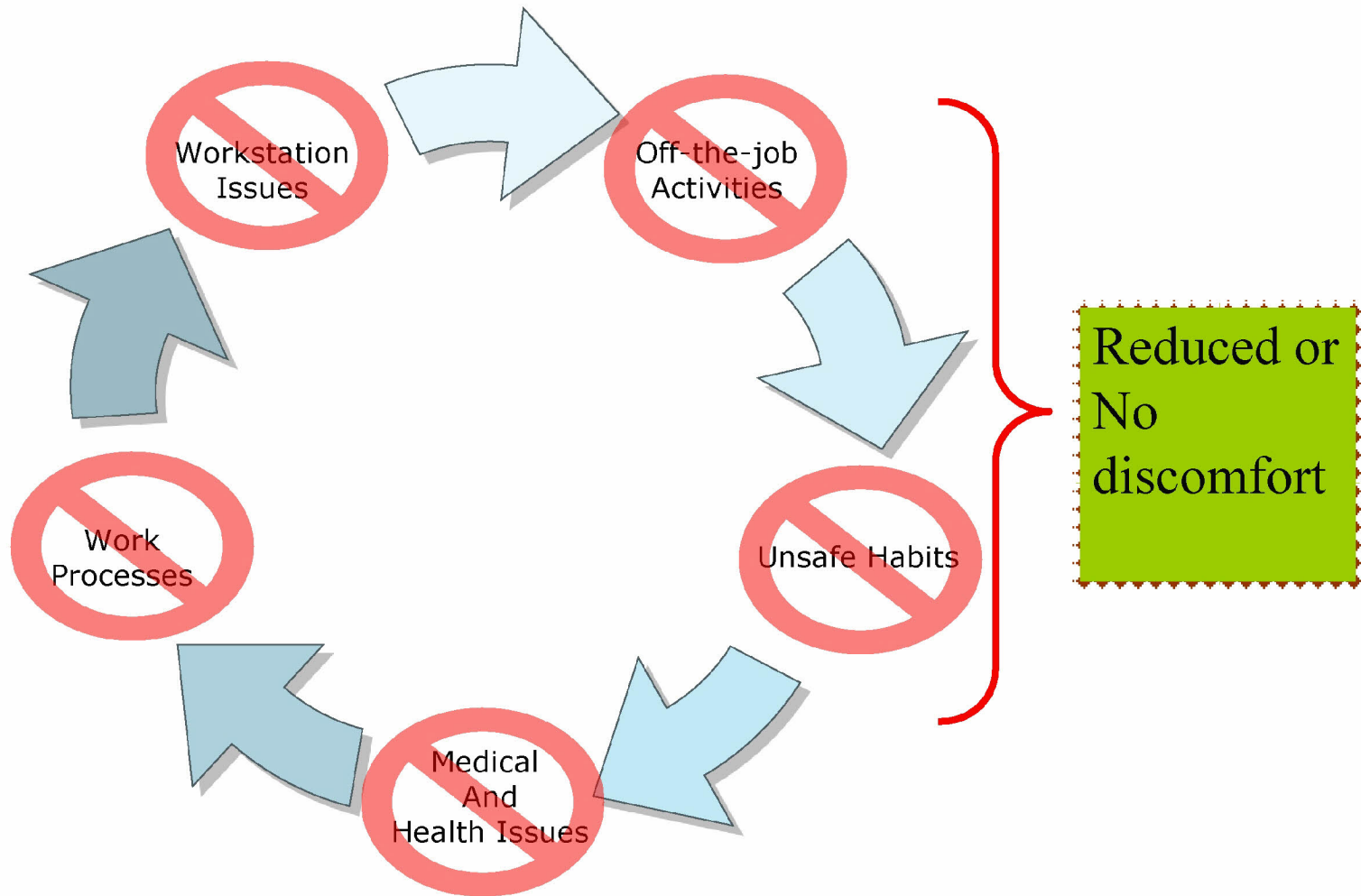


## What are symptoms of an RSI?

- Pain or Discomfort
- Weakness or loss of grip strength
- Numbness and tingling in the hand
- Nocturnal Numbness
- Swelling and Soreness in wrists
- Inability to distinguish hot and cold

***Call 242-ERGO to report symptoms and/or discomfort  
as soon as possible!***

# Break the RSI Cycle – reduce risks in all areas.



# Reducing the RSI risk with safe behaviors



## Safe behaviors

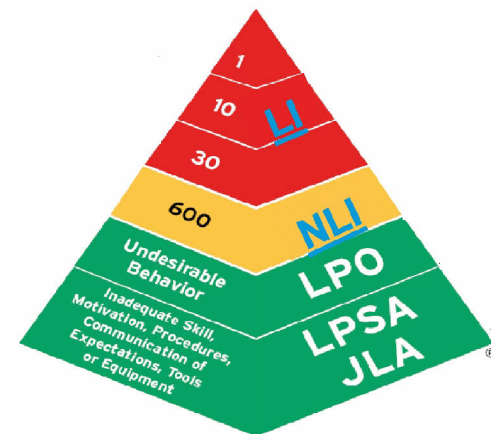
Most significant risk factor

Impact both on and off-the-job activities

Most cost effective

1. Adhere to Work Pace Software on Gil Workstations – 100% micro-pauses! 90% Work Pace Breaks!
2. Do your best to have good posture – Ears over Shoulders over Hips over Ankles

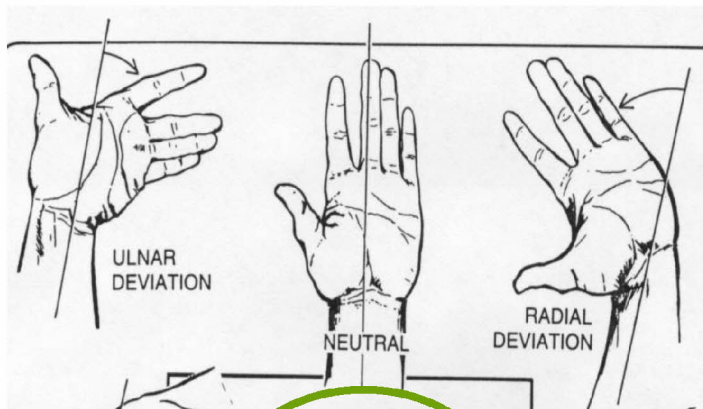
Assess, Analyze, Act



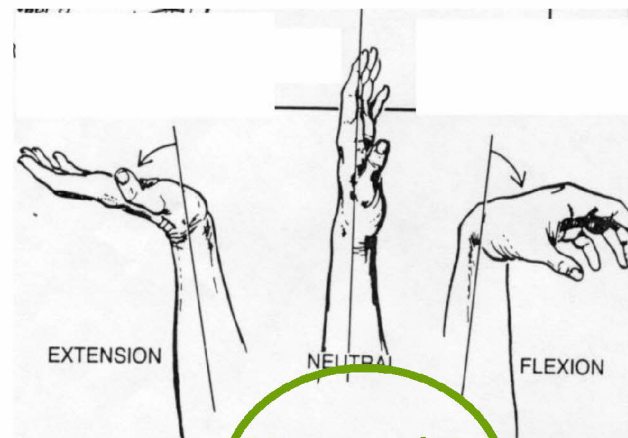


# Hand tool - Risk Factors

## 1. Wrist and Hand Position



Neutral is  
Desirable



Neutral is  
Desirable

Some tools are specially designed so the tool does the bending and not your wrist. Bent handle pliers, hammers, utility knives and even screw drivers are commercially available. Depending on the task, these can mean less wear and tear on your joints and muscles.



# Hand tool - Risk Factors

## 2. Repetitiveness of the task

- Similar Task/Movements
- Dependent on duration and recovery time
- A guideline for “repetition” is performing the same motions continuously for 2 hours, or more than a total of 4 hours during the day.

## 3. Pinch Grips

- Lateral, Precision, or Palmar Pinch

Pinch grips, when combined with high force and repetition can place stress on the wrist. One example is the lateral pinch which uses the thumb & side of the index finger like in turning a key. The precision pinch uses just the tip of the thumb & index finger for small tool use and the palmar pinch is when an object is held between the fingers and the palm.

# Hand tool - Risk Factors

## 4. Poor Handle Design

- Slippery
- Unbalanced
- Hard, unpadded
- Grips that don't fit
- Finger indentations



Pinch grips, when combined with high force and repetition can place stress on the wrist. One example is the lateral pinch which uses the thumb & side of the index finger like in turning a key. The precision pinch uses just the tip of the thumb & index finger for small tool use and the palmer pinch is when an object is held between the fingers and the palm.



# Reduce Risk Factors – Hand Tools

## 1. Good Handle Design

- Textured Grips
- Padded Handles
- Vibration Dampening
- Low force
- Elbow bent close to your side
- Accommodates different hand sizes, not too large

# Reduce Risk Factors – Hand Tools

## 2. Properties of good PLIERS

- 4" handles
- Cushioned handles with friction
- Handle opening 2-2.5"
- Spring loaded
- Bent handles/ pistol grip



When selecting pliers, look for handles four or more inches long without pressure points on palms & fingers, cushioned handles with good friction for gripping and handle openings between 2-2 1/2 inches. Spring loaded handles in some pliers can lessen muscle fatigue and a bent handle design, depending on the job, may reduce wrist strain.

# Reduce Risk Factors – Hand Tools

## 3. Properties of good SCREWDRIVERS

- 4 – 5" handle (standard)
- 3 – 4" handle (precision)
- Domed Handle
- Dual textured
- Blade tip matches the fastener

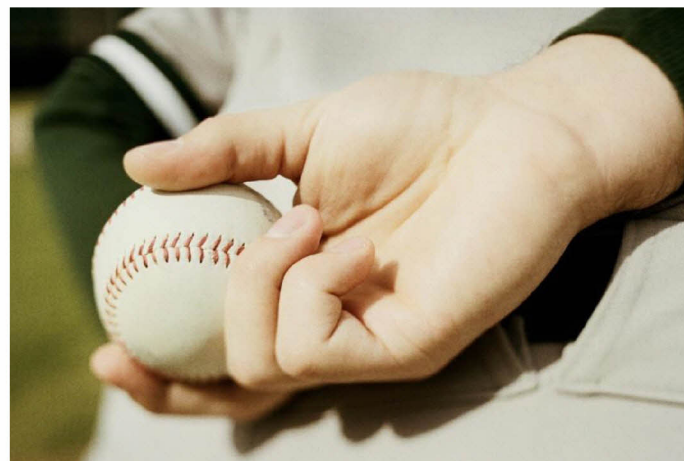
When selecting pliers, look for handles four or more inches long without pressure points on palms & fingers, cushioned handles with good friction for gripping and handle openings between 2-2 1/2 inches. Spring loaded handles in some pliers can lessen muscle fatigue and a bent handle design, depending on the job, may reduce wrist strain.

## Reduce RSI Risk Factors - Related

### 4. Maintain your fitness

- People who exercise 3+ times per week had fewer reports of discomfort (
- Take mini breaks and stretch breaks to improve range of motion and increase blood flow.

Like cars, preventive maintenance keeps our bodies running at peak efficiency. For people, protecting ourselves from CTD's means maintaining joint & muscle flexibility and strength through a regular routine of stretching and strength training.





## Reduce RSI Risk Factors:

### 5. Vary your tasks – Work planning and flow

Varying your tasks provides recovery time for muscles of your back, shoulders, forearms, wrists and hands.







## Sharing Personal Stories – [REDACTED]

At the time of his injury, [REDACTED] was loading a pump – listen to [REDACTED] story.

Safety Reminder – Be aware of the presence of pinch points. Do not try to use your body to slow the movement of a mechanical part.